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REMARKS

Disposition of Claims

Upon entry of the amendments herein, claims 1-20 and 34-41 will remain pending in the application and stand ready for further action on the merits. Previously, claims 21-33 and 42-60 were canceled in response to a restriction requirement. Independent claim 1 has been amended to recite that the retainer unit has a rectangular opening for receiving a fiber stub array. The opening includes a sloping side wall that mates with a sloping side wall of the fiber stub array. The retainer unit further includes a wedge well for receiving a wedge. This amendment is fully supported by the specification particularly at pages 13, (lines 6-34); 14 (lines 1-25); and 16 (lines 1-11), and Figures 17-24. Claims 2-11 are dependent upon amended claim 1. Claims 2 and 6 have been amended to correct typographical errors. Independent claim 12 has been amended to clarify that the retainer unit assembly includes a base unit, optoelectronic plate, fiber stub array, and connector latch. This amendment is fully supported by the specification particularly at pages 17 (lines 27-34); 18 (lines 1-34); and 19 (lines 1-14), and Figure 29. Claims 13-20 are dependent upon amended claim 12. Claim 13 has been amended to clarify that optoelectronic plate includes a weld plate and ceramic substrate. Independent claims 34 and 40 have been amended to state that the cradle unit comprises a lower and upper cradle member as described at page 4, lines 28-34 and pages 5-9 and as shown in Figures 1 and 2. Also, claim 40 has been amended to clarify that the plastic housing is a fiber stub array having a plurality of passageways. This amendment is supported by the specification at page 9, lines 8-34 and Figures 5-6. Claim 41 is dependent upon claim 40 and has been amended to correct a typographical error. No new matter has been added to the specification.

Rejection of Claims Under 35 U.S.C. §102

The Office Action first states that claims 1, 5-6, and 8-10 are rejected under 35 U.S.C. §102(b) as being anticipated by Kakii et al., U.S. Patent 5,719,978 ("Kakii"). It is

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submitted that Kakii does not anticipate the present invention, as recited in amended claims 1, 5-6, and 8-10, for the reasons discussed below.

Applicant agrees with the Examiner that Kakii discloses an optical fiber array which couples to a laser diode array or photodiode array. As the Examiner points out, Kakii shows an optical fiber array in Fig. 38. The optical fiber array includes a lower plate (101) and an upper plate (102). The lower plate (101) contains V-shaped grooves (101a) which hold the optical fibers (1). The optical fiber array then is inserted into a metal flange (104) having an opening (103) for receiving the optical fiber array. The Office Action suggests that the metal flange (104) is equivalent to the retainer unit claimed by Applicants. However, it is respectfully submitted that the retainer unit, as recited in amended claims 1, 5-6, and 8-10, has a completely different structure than the metal flange structure (104) which receives the optical fiber array in Kakii.

First, the presently claimed retainer unit includes a rectangular opening for receiving a fiber stub array. The rectangular opening of the retainer unit includes a sloping sidewall and the fiber stub array includes a sloping sidewall. The slope angle of the sidewall in the opening is substantially the same as the slope angle of the sidewall of the fiber stub array. Secondly, the presently claimed retainer unit includes a wedge well that extends through the retainer. The wedge well is adapted for receiving a wedge. When the fiber stub array is placed into the retainer and a wedge is inserted into the wedge well, the sloping sidewall surfaces are mated together and the wedge is pressed against the fiber stub array. These actions fix the fiber stub array in position. Lateral movement of the fiber stub array becomes restrained. This locking mechanism is described at page 13, lines 16-26 of the specification.

There is clearly no disclosure or suggestion for such a retainer unit structure or locking mechanism in Kakii. Rather, Kakii simply describes inserting an optical fiber array into an opening (103) in a metal flange (104) and then using solder to fix all of the parts.

The upper and lower plates are inserted through the opening 103 until the support plates 106 touch the flange 104. A metal sleeve 105 for protecting the lower and upper plates 101 and 102 is fixed to the opposite side of the flange 104 at opening 103. (col. 20, lines 25-29).

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Next, the ends of the lower and upper plates 101 and 102, which project from the metal sleeve 105, are soaked in the solder bath (see FIG. 18C), and high frequency oscillation is applied to the solder to fill the solder up to the opposite end (FIG. 40). Then, the solder is filled between the metal sleeve 105 and the flange 104, and between the lower and upper plates 101 and 102 which hold the optical fibers 1 such that the parts are all fixed in an airtight sealing. (col. 20, lines 37-40).

Kakii does not disclose each element of the presently claimed invention as required by an anticipatory reference. In view of the foregoing, it is respectfully requested that the rejection of claims 1, 5-6, and 8-10 (as amended) under 35 U.S.C. §102(b) in view of Kakii be withdrawn.

Secondly, the Office Action states that claims 1-2, 4-5, and 8-11 are rejected under 35 U.S.C. §102(e) as being anticipated by Kurashima et al., U.S. Patent 6,599,032 ("Kurashima"). Applicants agree with the Examiner that Kurashima discloses an optical module substrate having optical elements (light-receiving/light-transmitting elements) and optical fibers.

As the Examiner points out, FIG. 50 in Kurashima discloses light-emitting module (110) having a platform (114) for mounting an optical fiber array (116) and semiconductor laser array (118) which are covered with fixing piece (124) (col. 32, lines 66-67 and col. 33, lines 1-7). But, Kurashima does not disclose or suggest the presently claimed retainer unit. The platform (114) in Kurashima, which receives the optical fiber array (116), is designed differently than the retainer unit recited in amended claims 1-2, 4-5, and 8-11. Particularly, the platform (114) in Kurashima is not a retainer unit including a rectangular opening with a sloping sidewall which abuts a sloping sidewall of the optical fiber array and a wedge well for receiving a wedge. The Kurashima platform (114) simply includes a mounting surface for the fiber array:

FIG. 56 is a perspective view of the platform 114. The platform 114 is made of silicon and has an almost flat plate shape. An optical fiber array mounting region 114a for mounting the optical fiber array 116, a semiconductor laser array mounting region 114b for mounting the semiconductor laser array 118, and a linear groove portion 114c for partitioning the optical fiber array mounting region 114a and the semiconductor laser array mounting region 114b are formed on one major surface (to be referred to as a mounting surface hereinafter) of the

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platform 114. In the optical fiber array mounting region 114a, groove portions 114d and 114e where the optical fibers 116b and two pins 116c of the optical fiber array 116 are to be arranged are formed perpendicular to the groove portion 114c. (Col. 33, lines 64-67 and Col. 34, lines 1-10).

In summary, it is submitted that Kurashima does not disclose each element of the presently claimed invention as required by an anticipatory reference. Accordingly, it is respectfully requested that the rejections of claims 1-2, 4-5, and 8-11 (as amended) under 35 U.S.C. §102(e) in view of Kurashima be withdrawn.

Rejection of Claims Under 35 U.S.C. §103(a)

The Office Action states that claims 3, 7, 12-20, and 34-41 are rejected under 35 U.S.C. §103(a) as being unpatentable over Kurashima in view of Shiflett, U.S. Patent 5,619,604 ("Shiflett"). It is submitted that the present invention, as recited in amended claims 3, 7, 12-20 and 34-41, is not prima facie obvious over the combination of Kurashima and Shiflett for the reasons discussed below.

As discussed above, the metal flange which receives the optical fiber array in Kakii and the platform which receives the optical fiber array in Kurashima have different structures than the presently claimed unit. Claim 1 has been amended, and Applicants believe that claim 1 is now in condition for allowance for the reasons discussed above. Claims 3 and 7 depend on amended claim 1; thus, it is submitted that these dependent claims are also in condition for allowance.

Concerning claims 12-20, these claims have been amended to recite that the retainer unit assembly includes a base unit, optoelectronic plate, fiber stub array, and connector latch. Claims 34-41 have been amended to recite that the cradle unit, which encases the fiber stub array, comprises separate lower and upper cradle members. These cradle members function to provide a U-shaped structure for holding the fiber stub array as discussed at page 4, lines 29-31. Turning to Shiflett, this reference discloses a connector having a multi-fiber ferrule, and the connector (10) is shown being inserted into an optical receptacle (16) in FIG. 4. The connector (10) includes a latching means (62) and slide means (64) for engaging and locking with the receptacle (16) as described at col. 3, lines 60-67 and col. 4, lines 1-9. Shiflett fails to teach a cradle unit having

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upper and lower cradle members for encasing an optical fiber array as presently claimed. There is no disclosure or suggestion for such a cradle unit. Thus, even if a person of ordinary skill in the art turned to Kurashima or Kakii and combined their teachings with Shiflett, the present invention would not be obvious. In view of the teachings in Kurashima, Kakii, and Shiflett, a person of ordinary skill in the art could only construct Applicants' invention in hindsight based on Applicants' own specification and such a construction is impermissible.

Accordingly, it is respectfully requested that the rejection of claims 3, 7, 12-20, and 34-41 under 35 U.S.C. §103(a) be withdrawn.

Conclusion

In summary, Applicants submit that all of the claims presented for consideration herein are patentable and each of the Examiner's rejections and objections has been overcome. Accordingly, Applicants respectfully request favorable consideration and allowance of claims 1-20 and 34-41 (as amended).

The Commissioner is hereby authorized to charge any additional fee required in connection with the filing of this paper or credit any overpayment to Deposit Account 02-0900. Should there be any outstanding matter that needs to be resolved in the present application, the Examiner is invited to contact the undersigned at the telephone number provided below.

Respectfully submitted,

BARLOW, JOSEPHS & HOLMES, LTD.

By: *Daniel W. Sullivan*

Daniel W. Sullivan
Registration No. 34,937
101 Dyer Street, 5th Floor
Providence, RI 02903
Tel: 401-273-4446
Fax: 401-273-4447

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